



IFW16

RAW SEQUENCE LISTING

PATENT APPLICATION: US/08/958,570A

DATE: 08/24/2004

TIME: 10:11:59

Input Set : N:\Crf3\RULE60\08958570A.raw
 Output Set: N:\CRF4\08242004\H958570A.raw

SEQUENCE LISTING

1 (1) GENERAL INFORMATION:

2 (i) APPLICANT: Gregory, Richard J.
 3 Wills, Ken N.
 4 Maneval, Daniel C.

5 (ii) TITLE OF INVENTION: Recombinant Adenoviral Vector and
 6 Methods of Use

7 (iii) NUMBER OF SEQUENCES: 9

8 (iv) CORRESPONDENCE ADDRESS:

9 (A) ADDRESSEE: Townsend and Townsend and Crew LLP
 10 (B) STREET: Two Embarcadero Center, Eighth Floor
 11 (C) CITY: San Francisco
 12 (D) STATE: California
 13 (E) COUNTRY: USA
 14 (F) ZIP: 94111-3834

15 (v) COMPUTER READABLE FORM:

16 (A) MEDIUM TYPE: Floppy disk
 17 (B) COMPUTER: IBM PC compatible
 18 (C) OPERATING SYSTEM: PC-DOS/MS-DOS
 19 (D) SOFTWARE: PatentIn Release #1.0, Version #1.30

20 (vi) CURRENT APPLICATION DATA:

C--> 21 (A) APPLICATION NUMBER: US/08/958,570A
 C--> 22 (B) FILING DATE: 28-Oct-1997
 23 (C) CLASSIFICATION:

24 (vii) PRIOR APPLICATION DATA:

W--> 25 (A) APPLICATION NUMBER: US/08/328,673
 26 (B) FILING DATE: 25-Oct-1994

W--> 27 (A) APPLICATION NUMBER: US 08/142,669
 28 (B) FILING DATE: 25-OCT-1993

W--> 29 (A) APPLICATION NUMBER: US 08/233,669
 30 (B) FILING DATE: 26-APR-1994

31 (viii) ATTORNEY/AGENT INFORMATION:

32 (A) NAME: Smith, Timothy S.
 33 (B) REGISTRATION NUMBER: 35,367
 34 (C) REFERENCE/DOCKET NUMBER: 016930-000920US

35 (ix) TELECOMMUNICATION INFORMATION:
 36 (A) TELEPHONE: (415) 576-0200
 37 (B) TELEFAX: (415) 576-0300

38 (2) INFORMATION FOR SEQ ID NO: 1:

39 (i) SEQUENCE CHARACTERISTICS:
 40 (A) LENGTH: 25 base pairs
 41 (B) TYPE: nucleic acid
 42 (C) STRANDEDNESS: single

ENTERED

RAW SEQUENCE LISTING

PATENT APPLICATION: US/08/958,570A

DATE: 08/24/2004

TIME: 10:11:59

Input Set : N:\Crf3\RULE60\08958570A.raw
 Output Set: N:\CRF4\08242004\H958570A.raw

43 (D) TOPOLOGY: linear
 W--> 44 (ii) MOLECULE TYPE: DNA
 45 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
 46 CGCCACCGAG GGACCTGAGC GAGTC 25
 48 (2) INFORMATION FOR SEQ ID NO: 2:
 49 (i) SEQUENCE CHARACTERISTICS:
 50 (A) LENGTH: 20 base pairs
 51 (B) TYPE: nucleic acid
 52 (C) STRANDEDNESS: single
 53 (D) TOPOLOGY: linear
 W--> 54 (ii) MOLECULE TYPE: DNA
 55 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
 56 TTCTGGGAAG GGACAGAAGA 20
 58 (2) INFORMATION FOR SEQ ID NO: 3:
 59 (i) SEQUENCE CHARACTERISTICS:
 60 (A) LENGTH: 25 base pairs
 61 (B) TYPE: nucleic acid
 62 (C) STRANDEDNESS: single
 63 (D) TOPOLOGY: linear
 W--> 64 (ii) MOLECULE TYPE: DNA
 65 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
 66 CGCGCTAGCT CTGCCCCAAA GAGCT 25
 68 (2) INFORMATION FOR SEQ ID NO: 4:
 69 (i) SEQUENCE CHARACTERISTICS:
 70 (A) LENGTH: 39 base pairs
 71 (B) TYPE: nucleic acid
 72 (C) STRANDEDNESS: single
 73 (D) TOPOLOGY: linear
 W--> 74 (ii) MOLECULE TYPE: DNA
 75 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
 76 CGCGGTACCC TCGAGTCTAG ATATTGCCAG TGGTGGAAG 39
 78 (2) INFORMATION FOR SEQ ID NO: 5:
 79 (i) SEQUENCE CHARACTERISTICS:
 80 (A) LENGTH: 35 base pairs
 81 (B) TYPE: nucleic acid
 82 (C) STRANDEDNESS: single
 83 (D) TOPOLOGY: linear
 W--> 84 (ii) MOLECULE TYPE: DNA
 85 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
 86 CGTGCAGCCG CTGGAGGACT TTGAGGATGT CTGTC 35
 88 (2) INFORMATION FOR SEQ ID NO: 6:
 89 (i) SEQUENCE CHARACTERISTICS:
 90 (A) LENGTH: 33 base pairs
 91 (B) TYPE: nucleic acid
 92 (C) STRANDEDNESS: single
 93 (D) TOPOLOGY: linear
 W--> 94 (ii) MOLECULE TYPE: DNA
 95 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
 96 CGCTCTAGAG AGACCAGTTA GGAAGTTTC GCA 33

RAW SEQUENCE LISTING

PATENT APPLICATION: US/08/958,570A

DATE: 08/24/2004

TIME: 10:11:59

Input Set : N:\Crf3\RULE60\08958570A.raw
Output Set: N:\CRF4\08242004\H958570A.raw

98 (2) INFORMATION FOR SEQ ID NO: 7:

99 (i) SEQUENCE CHARACTERISTICS:

100 (A) LENGTH: 2995 base pairs
101 (B) TYPE: nucleic acid
102 (C) STRANDEDNESS: single
103 (D) TOPOLOGY: linear

104 (ii) MOLECULE TYPE: cDNA

105 (ix) FEATURE:

106 (A) NAME/KEY: CDS

107 (B) LOCATION: 139..2925

108 (D) OTHER INFORMATION: /product= "RB"

109 /note= "retinoblastoma tumor suppressor"

110 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

111 TTCCGGTTTT TCTCAGGGGA CGTTGAAATT ATTTTTGTAA CGGGAGTCGG GAGAGGACGG	60
112 GGGTGCCTCC CGGTGCGCGC CGCTCGTCCT CCCCGCGCT CCTCCACAGC TCGCTGGCTC	120
113 CCGCCGCGGA AAGGCGTC ATG CCG CCC AAA ACC CCC CGA AAA ACG GCC GCC	171
114 Met Pro Pro Lys Thr Pro Arg Lys Thr Ala Ala	
115 1 5 10	
116 ACC GCC GCC GCT GCC GCG GAA CCC CCG GCA CCG CCG CCG CCC	219
117 Thr Ala Ala Ala Ala Ala Glu Pro Pro Ala Pro Pro Pro Pro	
118 15 20 25	
119 CCT CCT GAG GAG GAC CCA GAG CAG GAC AGC GGC CCG GAG GAC CTG CCT	267
120 Pro Pro Glu Glu Asp Pro Glu Gln Asp Ser Gly Pro Glu Asp Leu Pro	
121 30 35 40	
122 CTC GTC AGG CTT GAG TTT GAA GAA ACA GAA GAA CCT GAT TTT ACT GCA	315
123 Leu Val Arg Leu Glu Phe Glu Glu Thr Glu Glu Pro Asp Phe Thr Ala	
124 45 50 55	
125 TTA TGT CAG AAA TTA AAG ATA CCA GAT CAT GTC AGA GAG AGA GCT TGG	363
126 Leu Cys Gln Lys Leu Lys Ile Pro Asp His Val Arg Glu Arg Ala Trp	
127 60 65 70 75	
128 TTA ACT TGG GAG AAA GTT TCA TCT GTG GAT GGA GTA TTG GGA GGT TAT	411
129 Leu Thr Trp Glu Lys Val Ser Ser Val Asp Gly Val Leu Gly Gly Tyr	
130 80 85 90	
131 ATT CAA AAG AAA AAG GAA CTG TGG GGA ATC TGT ATC TTT ATT GCA GCA	459
132 Ile Gln Lys Lys Glu Leu Trp Gly Ile Cys Ile Phe Ile Ala Ala	
133 95 100 105	
134 GTT GAC CTA GAT GAG ATG TCG TTC ACT TTT ACT GAG CTA CAG AAA AAC	507
135 Val Asp Leu Asp Glu Met Ser Phe Thr Phe Thr Glu Leu Gln Lys Asn	
136 110 115 120	
137 ATA GAA ATC AGT GTC CAT AAA TTC TTT AAC TTA CTA AAA GAA ATT GAT	555
138 Ile Glu Ile Ser Val His Lys Phe Phe Asn Leu Leu Lys Glu Ile Asp	
139 125 130 135	
140 ACC AGT ACC AAA GTT GAT AAT GCT ATG TCA AGA CTG TTG AAG AAG TAT	603
141 Thr Ser Thr Lys Val Asp Asn Ala Met Ser Arg Leu Leu Lys Lys Tyr	
142 140 145 150 155	
143 GAT GTA TTG TTT GCA CTC TTC AGC AAA TTG GAA AGG ACA TGT GAA CTT	651
144 Asp Val Leu Phe Ala Leu Phe Ser Lys Leu Glu Arg Thr Cys Glu Leu	
145 160 165 170	
146 ATA TAT TTG ACA CAA CCC AGC AGT TCG ATA TCT ACT GAA ATA AAT TCT	699

RAW SEQUENCE LISTING

PATENT APPLICATION: US/08/958,570A

DATE: 08/24/2004

TIME: 10:11:59

Input Set : N:\Crf3\RULE60\08958570A.raw
 Output Set: N:\CRF4\08242004\H958570A.raw

147	Ile	Tyr	Leu	Thr	Gln	Pro	Ser	Ser	Ser	Ile	Ser	Thr	Glu	Ile	Asn	Ser	
148						175				180			185				
149	GCA	TTG	GTG	CTA	AAA	GTT	TCT	TGG	ATC	ACA	TTT	TTA	TTA	GCT	AAA	GGG	747
150	Ala	Leu	Val	Leu	Lys	Val	Ser	Trp	Ile	Thr	Phe	Leu	Leu	Ala	Lys	Gly	
151						190				195			200				
152	GAA	GTA	TTA	CAA	ATG	GAA	GAT	GAT	CTG	GTG	ATT	TCA	TTT	CAG	TTA	ATG	795
153	Glu	Val	Leu	Gln	Met	Glu	Asp	Asp	Leu	Val	Ile	Ser	Phe	Gln	Leu	Met	
154						205				210			215				
155	CTA	TGT	GTC	CTT	GAC	TAT	TTT	ATT	AAA	CTC	TCA	CCT	CCC	ATG	TTG	CTC	843
156	Leu	Cys	Val	Leu	Asp	Tyr	Phe	Ile	Lys	Leu	Ser	Pro	Pro	Met	Leu	Leu	
157						220				225			230			235	
158	AAA	GAA	CCA	TAT	AAA	ACA	GCT	GTT	ATA	CCC	ATT	AAT	GGT	TCA	CCT	CGA	891
159	Lys	Glu	Pro	Tyr	Lys	Thr	Ala	Val	Ile	Pro	Ile	Asn	Gly	Ser	Pro	Arg	
160						240				245			250				
161	ACA	CCC	AGG	CGA	GGT	CAG	AAC	AGG	AGT	GCA	CGG	ATA	GCA	AAA	CAA	CTA	939
162	Thr	Pro	Arg	Arg	Gly	Gln	Asn	Arg	Ser	Ala	Arg	Ile	Ala	Lys	Gln	Leu	
163						255				260			265				
164	GAA	AAT	GAT	ACA	AGA	ATT	ATT	GAA	GTT	CTC	TGT	AAA	GAA	CAT	GAA	TGT	987
165	Glu	Asn	Asp	Thr	Arg	Ile	Ile	Glu	Val	Leu	Cys	Lys	Glu	His	Glu	Cys	
166						270				275			280				
167	AAT	ATA	GAT	GAG	GTG	AAA	AAT	GTT	TAT	TTC	AAA	AAT	TTT	ATA	CCT	TTT	1035
168	Asn	Ile	Asp	Glu	Val	Lys	Asn	Val	Tyr	Phe	Lys	Asn	Phe	Ile	Pro	Phe	
169						285				290			295				
170	ATG	AAT	TCT	CTT	GGA	CTT	GTA	ACA	TCT	AAT	GGA	CTT	CCA	GAG	GTT	GAA	1083
171	Met	Asn	Ser	Leu	Gly	Leu	Val	Thr	Ser	Asn	Gly	Leu	Pro	Glu	Val	Glu	
172						300				305			310			315	
173	AAT	CTT	TCT	AAA	CGA	TAC	GAA	GAA	ATT	TAT	CTT	AAA	AAT	AAA	GAT	CTA	1131
174	Asn	Leu	Ser	Lys	Arg	Tyr	Glu	Glu	Ile	Tyr	Leu	Lys	Asn	Lys	Asp	Leu	
175						320				325			330				
176	GAT	GCA	AGA	TTA	TTT	TTG	GAT	CAT	GAT	AAA	ACT	CTT	CAG	ACT	GAT	TCT	1179
177	Asp	Ala	Arg	Leu	Phe	Leu	Asp	His	Asp	Lys	Thr	Leu	Gln	Thr	Asp	Ser	
178						335				340			345				
179	ATA	GAC	AGT	TTT	GAA	ACA	CAG	AGA	ACA	CCA	CGA	AAA	AGT	AAC	CTT	GAT	1227
180	Ile	Asp	Ser	Phe	Glu	Thr	Gln	Arg	Thr	Pro	Arg	Lys	Ser	Asn	Leu	Asp	
181						350				355			360				
182	GAA	GAG	GTG	AAT	GTA	ATT	CTT	CCA	CAC	ACT	CCA	GTT	AGG	ACT	GTT	ATG	1275
183	Glu	Glu	Val	Asn	Val	Ile	Leu	Pro	His	Thr	Pro	Val	Arg	Thr	Val	Met	
184						365				370			375				
185	AAC	ACT	ATC	CAA	CAA	TTA	ATG	ATG	ATT	TTA	AAT	TCA	GCA	AGT	GAT	CAA	1323
186	Asn	Thr	Ile	Gln	Gln	Leu	Met	Met	Ile	Leu	Asn	Ser	Ala	Ser	Asp	Gln	
187						380				385			390			395	
188	CCT	TCA	GAA	AAT	CTG	ATT	TCC	TAT	TTT	AAC	AAC	TGC	ACA	GTG	AAT	CCA	1371
189	Pro	Ser	Glu	Asn	Leu	Ile	Ser	Tyr	Phe	Asn	Asn	Cys	Thr	Val	Asn	Pro	
190						400				405			410				
191	AAA	GAA	AGT	ATA	CTG	AAA	AGA	GTG	AAG	GAT	ATA	GGA	TAC	ATC	TTT	AAA	1419
192	Lys	Glu	Ser	Ile	Leu	Lys	Arg	Val	Lys	Asp	Ile	Gly	Tyr	Ile	Phe	Lys	
193						415				420			425				
194	GAG	AAA	TTT	GCT	AAA	GCT	GTG	GGA	CAG	GGT	TGT	GTC	GAA	ATT	GGA	TCA	1467
195	Glu	Lys	Phe	Ala	Lys	Ala	Val	Gly	Gln	Gly	Cys	Val	Glu	Ile	Gly	Ser	

RAW SEQUENCE LISTING

PATENT APPLICATION: US/08/958,570A

DATE: 08/24/2004

TIME: 10:11:59

Input Set : N:\Crf3\RULE60\08958570A.raw
Output Set: N:\CRF4\08242004\H958570A.raw

196	430	435	440	
197	CAG CGA TAC AAA CTT GGA GTT CGC TTG TAT TAC CGA GTA ATG GAA TCC			1515
198	Gln Arg Tyr Lys Leu Gly Val Arg Leu Tyr Tyr Arg Val Met Glu Ser			
199	445	450	455	
200	ATG CTT AAA TCA GAA GAA CGA TTA TCC ATT CAA AAT TTT AGC AAA			1563
201	Met Leu Lys Ser Glu Glu Arg Leu Ser Ile Gln Asn Phe Ser Lys			
202	460	465	470	475
203	CTT CTG AAT GAC AAC ATT TTT CAT ATG TCT TTA TTG GCG TGC GCT CTT			1611
204	Leu Leu Asn Asp Asn Ile Phe His Met Ser Leu Leu Ala Cys Ala Leu			
205	480	485	490	
206	GAG GTT GTA ATG GCC ACA TAT AGC AGA AGT ACA TCT CAG AAT CTT GAT			1659
207	Glu Val Val Met Ala Thr Tyr Ser Arg Ser Thr Ser Gln Asn Leu Asp			
208	495	500	505	
209	TCT GGA ACA GAT TTG TCT TTC CCA TGG ATT CTG AAT GTG CTT AAT TTA			1707
210	Ser Gly Thr Asp Leu Ser Phe Pro Trp Ile Leu Asn Val Leu Asn Leu			
211	510	515	520	
212	AAA GCC TTT GAT TTT TAC AAA GTG ATC GAA AGT TTT ATC AAA GCA GAA			1755
213	Lys Ala Phe Asp Phe Tyr Lys Val Ile Glu Ser Phe Ile Lys Ala Glu			
214	525	530	535	
215	GGC AAC TTG ACA AGA GAA ATG ATA AAA CAT TTA GAA CGA TGT GAA CAT			1803
216	Gly Asn Leu Thr Arg Glu Met Ile Lys His Leu Glu Arg Cys Glu His			
217	540	545	550	555
218	CGA ATC ATG GAA TCC CTT GCA TGG CTC TCA GAT TCA CCT TTA TTT GAT			1851
219	Arg Ile Met Glu Ser Leu Ala Trp Leu Ser Asp Ser Pro Leu Phe Asp			
220	560	565	570	
221	CTT ATT AAA CAA TCA AAG GAC CGA GAA GGA CCA ACT GAT CAC CTT GAA			1899
222	Leu Ile Lys Gln Ser Lys Asp Arg Glu Gly Pro Thr Asp His Leu Glu			
223	575	580	585	
224	TCT GCT TGT CCT CTT AAT CCT CTC CAG AAT AAT CAC ACT GCA GCA			1947
225	Ser Ala Cys Pro Leu Asn Leu Pro Leu Gln Asn Asn His Thr Ala Ala			
226	590	595	600	
227	GAT ATG TAT CTT CCT GTA AGA TCT CCA AAG AAA AAA GGT TCA ACT			1995
228	Asp Met Tyr Leu Ser Pro Val Arg Ser Pro Lys Lys Lys Gly Ser Thr			
229	605	610	615	
230	ACG CGT GTA AAT TCT ACT GCA AAT GCA GAG ACA CAA GCA ACC TCA GCC			2043
231	Thr Arg Val Asn Ser Thr Ala Asn Ala Glu Thr Gln Ala Thr Ser Ala			
232	620	625	630	635
233	TTC CAG ACC CAG AAG CCA TTG AAA TCT ACC TCT CTT TCA CTG TTT TAT			2091
234	Phe Gln Thr Gln Lys Pro Leu Lys Ser Thr Ser Leu Ser Leu Phe Tyr			
235	640	645	650	
236	AAA AAA GTG TAT CGG CTA GCC TAT CTC CGG CTA AAT ACA CTT TGT GAA			2139
237	Lys Lys Val Tyr Arg Leu Ala Tyr Leu Arg Leu Asn Thr Leu Cys Glu			
238	655	660	665	
239	CGC CTT CTG TCT GAG CAC CCA GAA TTA GAA CAT ATC ATC TGG ACC CTT			2187
240	Arg Leu Leu Ser Glu His Pro Glu Leu Glu His Ile Ile Trp Thr Leu			
241	670	675	680	
242	TTC CAG CAC ACC CTG CAG AAT GAG TAT GAA CTC ATG AGA GAC AGG CAT			2235
243	Phe Gln His Thr Leu Gln Asn Glu Tyr Glu Leu Met Arg Asp Arg His			
244	685	690	695	

VERIFICATION SUMMARY

PATENT APPLICATION: US/08/958,570A

DATE: 08/24/2004

TIME: 10:12:00

Input Set : N:\Crf3\RULE60\08958570A.raw
Output Set: N:\CRF4\08242004\H958570A.raw

L:21 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]
L:22 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]
L:27 M:238 W: Alpha Fields not Ordered, Reordered [(A) APPLICATION NUMBER:] of (1) (vii)
L:29 M:238 W: Alpha Fields not Ordered, Reordered [(A) APPLICATION NUMBER:] of (1) (vii)
L:44 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=1
L:54 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=2
L:64 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=3
L:74 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=4
L:84 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=5
L:94 M:246 W: Invalid value of Alpha Sequence Header Field, [MOLECULE TYPE:], SeqNo=6